Proceedings of the New York Entomological Society

(Meetings held in Room 319 of the American Museum of Natural History unless otherwise indicated.)

Meeting of October 3, 1967

Vice-president David Miller presided; 27 members and 29 guests were present. Dr. Miller announced the resignations of Dr. Richard Fredrickson and Mr. Raymond Brush, as the Society's President and Treasurer, respectively; Dr. Fredrickson has taken a position at St. Joseph's College in Philadelphia and Mr. Brush has moved to Florida. Dr. Miller announced the appointment of Doctors Elsie Klots, Kumar Krishna, and Jerome Rozen to the Nominating Committee for the 1968 elections. Dr. Krishna introduced Father Jean Ruelle, of the University of Lovanium, located in Kinshasa, the Congo, where he conducts research on African termites. Father Ruelle showed slides of the University's Campus and of termites and other insects in the University's collection. The following people were proposed for active membership: Dr. Edward Balboni of the Dept. of Biology of Hunter College; Dr. Paul Howse of the Bruce Museum of Greenwich, Conn.; Dr. June Tice of the American Museum; Dr. John Buckett of Davis, California; Mr. Peter Baker of Oaklyn, New Jersey; and Mr. Alfredo Sarachaga of New York City.

PROGRAM. **Wasps as Predators.** Dr. Howard E. Evans, Curator at the Museum of Comparative Zoology, Harvard University, illustrated his talk with slides and motion pictures. (An abstract follows.)

HOWARD R. TOPOFF, *Sec.*

WASPS AS PREDATORS

Wasps are nearly all predators, but they are predators of an unusual sort. They take prey not primarily for themselves, but for their offspring, and it follows from this that predatory behavior is limited to the female sex, since the males take no part in the nesting process. Furthermore, nearly all wasps are in some measure host-specific; that is, they take one particular type of arthropod only. In several groups, prey specificity is on the family level, e.g., all Dryinidae take leafhoppers, all Pompilidae spiders. In the true digger wasps, the Sphecidae, specificity is largely on the subfamily or genus level, and prey type often provides a good taxonomic character. For example, all Ampulicinae take cockroaches; but many genera of Nyssoninae take Homoptera, one takes Heteroptera, two take adult Lepidoptera, and several take Diptera. In the higher Nyssoninae, as in a few of the more highly evolved members of other subfamilies, there is a loss of host specificity (in *Microbembex*, for example). As a general rule, wasps which are more primitive structurally and which belong to groups with a long fossil record tend to take more primitive types of insects, indicating that there has been evolution paralleling that of their prey.

Wasps carry the paralyzed prey to their nest in a specific manner, but the mode of prey transport has undergone an evolution independent of that of prey type. Flies, for example, may be carried with the mandibles, with the middle legs, or on the sting; but groups of wasps which utilize a particular type of prey carriage may prey on quite a variety of different things. Mode of prey carriage has evidently been molded by different selection pressures having to do with the attacks of the ubiquitous dipterous parasites of these insects.

HOWARD E. EVANS

Meeting of October 17, 1967

Dr. David Miller presided; 11 members and 8 guests were present. Mr. W. E. McCauley, of the Shell Chemical Co. was introduced. He is in charge of the mixer for the Entomological Society of America meetings which will be held at the Hotel New Yorker, November 27–30. Mr. McCauley asked for volunteers to act as guides to show guests around the first floor exhibits of the American Museum, since the mixer will be held in the Invertebrate Hall. The following people were elected to membership: Dr. Edward Balboni, Dept of Biology, Hunter College; Dr. Paul Howse, Bruce Museum, Greenwich, Conn.; Dr. June Tice, American Museum; Dr. John Buckett, Davis, California; Mr. Peter Baker, Oaklyn, New Jersey; and Mr. Alfredo Sarachaga, New York City.

Mrs. Ophelia Gona of the City University of New York was proposed for student membership.

PROGRAM. **Reproductive Isolating Mechanisms in the Superspecies *Drosophila paulistorum*,** by Dr. Lee Ehrman of the Rockefeller University. (An abstract follows.)

HOWARD R. TOPOFF, *Sec.*

REPRODUCTIVE ISOLATING MECHANISMS IN THE SUPERSPECIES *Drosophila paulistorum*

The sterility of the male hybrids produced by crosses between the races of the superspecies *Drosophila paulistorum* is transmitted in the maternal line only, via the egg cytoplasm. The nature of the causative cytoplasmic factor is still undetermined. It is not independent of chromosomal genes, since it can be suppressed after several generations of backcrosses. The fact that it can be transferred for at least one generation by the injection of homogenates indicates that some sort of symbiont is involved. Heat shocks administered to the carriers of the symbiont interfere with its action in the subsequent generations although such treatments do not "cure" the carriers completely. In nature, however, these sterile male hybrids are not formed because of a primary isolating mechanism perfected between the *Drosophila paulistorum* races: sexual isolation.

Ehrman, L. 1967. Proc. Natl. Acad. Sci., **58**: 195–198.

LEE EHRMAN

November 7, 1967—Election Day—No meeting.

Meeting of November 21, 1967

Dr. David Miller presided: 25 members and 6 guests were present. Miss Anna Flaherty and Mr. John Van Wert, both of the Brooklyn Entomological Society, were introduced. Also introduced as guests were Mr. Bruce Cutler and Dr. Aaron Wasserman. Mrs. Ophelia Gona of the City University of New York was elected to student membership, and Mr. Russel Rahn of Wausau, Wisconsin was proposed for active membership.

PROGRAM. **Moth Mites, Old and New,** by Dr. Asher Treat, formerly of the City University of New York. (An abstract follows.)

HOWARD R. TOPOFF, *Sec.*

MOTH MITES, OLD AND NEW

At least four species of gamasine mites and one tydeid are known so far only from noctuid moths, while mites of more than twenty other species infest these insects among others. Except for the moth ear mite, incidence of infestation is ordinarily low. Most species appear to be merely phoretic upon their noctuid hosts, but a few are truly parasitic and can complete their life cycles without recourse to other food. Behavioral adaptations,

especially as regards site selection, characterize the various species, some being tympanicolous, some retropatagial, some submaxillary, and some relatively unrestricted. Little is known about moth mites in general, and observations by collectors, both amateur and professional, are likely to be of interest and value. Specimens may be preserved either dry or in alcohol.

Asher Treat

Meeting of December 5, 1967

The meeting was held in Room 129 with Dr. Jerome Rozen presiding in the absence of President Miller; 19 members and 2 guests were present. Mr. Russel Rahn of Wausau, Wisconsin was elected to active membership.

program. **Observations on the Anatomy of the Male Ant, *Myrmica rubra*,** by Dr. Winifred Trakimas of Marymount-Manhattan College. (An abstract follows.)

Howard R. Topoff, *Sec.*

OBSERVATIONS ON THE ANATOMY OF THE MALE ANT, *Myrmica rubra*

This investigation is a reinvestigation and expansion of Janet's studies, and it adds a myrmicine to the growing number of studies investigating phylogenetic relations among the subfamilies of ants.

Specimens gathered from nests were provided by Dr. M. V. Brian of the Nature Conservancy, Wareham, Dorset, England. Ants in two different states of maturity are described, those with large, sperm-filled testes and empty vasa deferentia, and those with depleted testes and the vasa deferentia packed with sperm. These developmental differences of the reproductive systems can be recognized by external differences in the individuals, and they are correlated with the functional condition of the ventriculus of the digestive system. The ventricular epithelium of males with sperm-filled testes consists of tall, columnar-shaped digestive cells, while the epithelium of males with depleted testes shows drastic degeneration. These degenerative changes appear to be part of the normal male cycle and begin before the ants leave the nest for the nuptial flight.

This study indicates a myrmicine pattern in the reproductive organs characterized by a small number of testicular lobes and in the shape and position of the seminal vesicles.

The three pairs of genitalic valves, the ninth and tenth terminal gastric terga, and the ninth sternum are sufficiently different from those of other myrmicines to be considered taxonomic criteria for this species.

The myrmicine subfamily seems more closely related, in the anatomy and histology of its reproductive system and in the anatomy of the genitalic valves and terminal gastric segments, to the ponerine, and in some points, to the formicine sub-family, rather than to the doryline or dolichoderine subfamilies.

Winifred Trakimas

Meeting of December 19, 1967

The meeting was held in Room 129, and Dr. David Miller presided; 19 members were present. Dr. Lee Herman of the American Museum was proposed and elected to active membership. It was announced that Miss Ann Young, formerly of the Dept. of Animal Behavior at the Museum, has taken a position in the Dept. of Biology at the University of Georgia.

program. **The Origin and Function of Castes in Army Ants: A Developmental Approach,** by Mr. Howard R. Topoff of the City University of New York. (An abstract follows.)

Howard R. Topoff, *Sec.*

THE ORIGIN AND FUNCTION OF CASTES IN ARMY ANTS: A DEVELOPMENTAL APPROACH

The appreciation of the fact that all individuals in sexually reproducing populations exhibit structural and functional variation has resulted from current, population-oriented, evolutionary studies. In the social Hymenoptera, such variation is embodied in the term "polymorphism" which is defined as the existence within a colony of two or more intrasexual castes, without regard to their genetic or environmental origin.

Developmentally, the best analyses of polymorphic differences have been applied through comparative population studies based upon larval allometric growth, adult allometry, and intra-colonial size-frequency distribution. In this approach, "allometry" refers to differences in proportions as related to changes in absolute magnitude of an entire organism or any of its parts.

For the biologist these population characteristics can be used to understand and describe the biological bases underlying physiological and behavioral integration.

HOWARD R. TOPOFF

Meeting of January 2, 1968—The Annual Meeting

The meeting was held in Room 129, and Dr. David Miller presided; 10 members and 2 guests were present. The Report of the Nominating Committee, composed of Dr. Jerome Rozen, Dr. Elsie Klots, and Dr. Kumar Krishna, proposed the following for election to the respective offices for 1968:

President—Dr. David Miller
Vice President—Dr. Lee Herman
Secretary—Mr. Howard Topoff
Assistant Secretary—Dr. June Tice
Treasurer—Mr. Nicholas Shoumatoff
Assistant Treasurer—Mrs. Patricia Vaurie
Trustees (renominated for a second two-year term):
Dr. Jerome Rozen and Mr. Robert Buckbee
Publication Committee:
Dr. Lucy Clausen Dr. Asher Treat
Dr. Peter Wygodzinsky

There were no further nominations, and the nominated candidates were elected. Mr. Joseph Myerson was proposed for active membership.

PROGRAM. **Mites from Desert to Seashore** by Dr. Richard Fredrickson of St. Joseph's College in Philadelphia. Dr. Fredrickson discussed the incidence and habits of mites in different habitats at various locations.

HOWARD R. TOPOFF, *Sec.*

Meeting of January 16, 1968

The meeting was held in Room 129, President David Miller presided; 16 members and 3 guests were present. Miss Alice Gray reported on the activities of the past year for the Junior Entomological Society. She described the Society's past field trips and future guest lecturer program. The Junior Society has a membership of 15, and at present there is a waiting list of six candidates. Dr. Herman introduced Dr. Wang, a post-doctoral fellow working at the American Museum on Psocoptera. Mr. Joseph Myerson was elected to active membership. Dr. David Kistner of Chico State College, Calif., was proposed for active membership and Mr. David Adler of Holliswood, New York was proposed for student membership.

program. **Some cases of Unusual Distribution Patterns** by Dr. Richard Blackwelder of Southern Illinois University. The speaker discussed some oddities of geographical distribution as they affect taxonomic thinking, and the genesis and philosophical basis of his recently published book, *TAXONOMY*.

Howard R. Topoff, *Sec.*

Meeting of February 6, 1968

President David Miller presided; 15 members and 4 guests were present. The reports of the Treasurer, Mr. Nicholas Shoumatoff, for 1967 and of the Auditing Committee composed of Mr. Robert Buckbee, Dr. Lucy Clausen, and Dr. Jerome Vanderberg, were submitted and accepted. Dr. David Kistner of Chico State College, Calif., was elected to active membership, and Mr. David Adler was elected to student membership. Dr. Miller announced that the Executive Committee of the Society has appointed Dr. John Schmitt to fill the position on the Publication Committee of Dr. Wygodzinsky, who has resigned.

program. **Chemical Communication in Insects** by Dr. George Happ of the Biology Dept. of New York University.

Howard R. Topoff, *Sec.*

Meeting of February 20, 1968

Dr. David Miller presided; 17 members and 5 guests were present. Dr. Forbes announced that the Fordham University Chapter of Sigma XI was sponsoring a symposium on "Human Chromosomes."

program. **High Jungle Revisited: A Look at Rancho Grande Today** by Dr. D. Duckworth of the National Museum in Washington, D. C. Dr. Duckworth discussed the research opportunities available at Rancho Grande, as well as aspects of his own work on the Lepidoptera of South America.

Howard R. Topoff, *Sec.*

Meeting of March 5, 1968

President David Miller presided; 13 members and 7 guests were present.

program. **The Evolutionary and Taxonomic Significance of Reproduction in the Blattaria** by Dr. Louis Roth of the U. S. Army Natick Laboratories, in Natick, Mass. (An abstract follows.)

Howard R. Topoff, *Sec.*

THE EVOLUTIONARY AND TAXONOMIC SIGNIFICANCE OF REPRODUCTION IN THE BLATTARIA

Oviposition behavior, water changes in the oötheca, structure of the oötheca and ovarioles tend to support the recent concept that there are 2 phyletic lineages in cockroaches. One, the superfamily Blattoidea, remained oviparous, whereas the second line, Blaberoidea, evolved ovoviviparity and viviparity.

Rotation of the oötheca occurs only in certain subfamilies of Blaberoidea and this was a necessary preadaption for the evolution of viviparity. Turning the oötheca 90° reoriented the egg case so that the long axes of the eggs lay in the plane of the cockroach's width, a position which allowed for the stretching of the uterus by the growing eggs.

The evolution of internal incubation of the eggs necessitated a change from a hard rigid oötheca that was dropped after its formation, to a soft, flexible, reduced egg case which would be retracted internally. Such changes have taken place in the Blaberoidea but not in the Blattoidea.

Studies of the shapes of water uptake curves of the eggs during development suggest

that ovoviviparous species may have evolved from a blattellid-like stock that had less than 50% water initially, whereas viviparous species may have come from a blattellid-like stock that had more than 50% water.

The Blaberoidea show a distinct evolutionary trend toward a decrease in the total number of oöcytes per ovariole, as well as a decrease in the number containing yolk at the time of oviposition. A similar trend is not found in the Blattoidea.

LOUIS ROTH

Meeting of March 19, 1968

President David Miller presided; 7 members and one guest were present.

PROGRAM. **Field Studies on Alligator Weed and Related Amaranths, and Their Biotic Suppressants in Southern United States.** Dr. George Vogt of the U. S. Department of Agriculture described his survey of the distribution of Alligator Weed, *Alternanthera philoxeroides*, and related plants in South America, and the selection of a flea beetle of the genus *Agasicles* for introduction into the United States as a biological control agent; this program has been successful. Alligator weed has been resistant to chemical herbicides. His talk was illustrated with color slides.

HOWARD R. TOPOFF, *Sec.*

Meeting of April 2, 1968

No regular meeting was held on this date. Members and guests of the Society attended the James Arthur Lecture in the Lecture Hall of the American Museum of Natural History. The speaker was Dr. Kenneth Roeder who lectured on **Three Views of the Nervous System.** The text of his talk will be published in one of the Museum publications.

HOWARD R. TOPOFF, *Sec.*

Meeting of April 16, 1968

Dr. David Miller presided: 19 members and 12 guests were present. Miss Kathleen Cunningham of Fordham University was nominated for Student Membership. Dr. Lee Herman discussed plans being made to reactivate the Coleopterists' Society.

PROGRAM. **Hidden World,** a National Geographic Society film which included many fine closeup color shots of insects by various cinematographers.

HOWARD R. TOPOFF, *Sec.*

Meeting of May 7, 1968

The meeting was held in Room 129, and President David Miller presided; 19 members and 15 guests were present. Miss Kathleen Cunningham of Fordham University was elected to Student Membership. Dr. George Happ, Department of Biology of New York University, was nominated for Active Membership. The President and Treasurer of the Junior Entomological Society described their plans for a field trip in September to the Archbold Research Station in Florida.

PROGRAM. **A Peephole in Africa.** Dr. John Stamatov showed a color film he had made during a recent trip to Africa. The film included extended sequences of African wildlife including the insect fauna.

HOWARD R. TOPOFF, *Sec.*

Meeting of May 21, 1968

The meeting was held in Room 129, and Dr. David Miller presided: 26 members and 16 guests were present. Dr. George Happ was elected to active membership. The following people were proposed for and elected to active membership: Mr. Jerzy Grabowski of West

Caldwell, New Jersey; Mr. Jack Shaff of Wantagh, N. Y.; Mr. Philip Mayer, Jr. of Great Neck, N. Y.; Dr. Leon R. Cahen of New York City; Mr. John Morony, Dept. of Ornithology of the American Museum. Dr. Miller announced that Dr. James Slater of the University of Connecticut will resume the Editorship of **Entomologica Americana**.

PROGRAM. **Simple Close-up Photography of Insects.** Mr. Matthew Cormans of the Dept. of Entomology of the Museum showed color slides including fine habitat shots of insects and explained and answered questions about his methods and equipment.

Howard R. Topoff, *Sec.*